



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Chirag Deepak Dalal; Vaijayanti Rakshit Bharadwaj  
Assignee: VERITAS Operating Corporation  
Title: Identification Of Storage To Acquire To Maintain The Intent Of Logical Volumes  
Serial No.: 10/812,322 Filing Date: March 29, 2004  
Examiner: Than Duc Vo Group Art Unit: 2189  
Docket No.: VRT0125US Client Ref. No.: VRTS 0613

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Austin, Texas  
December 1, 2006

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Dear Sir:

This request is submitted along with a Notice of Appeal under 37 CFR § 41.31, and is responsive to the final Office action dated October 2, 2006, having a shortened statutory period set to expire January 2, 2007. Further examination and consideration are requested.

**Remarks**

Claims 1-27 are pending.

**Rejection of Claims under 35 U.S.C. § 102/103**

Claims 1-9 and 13-28 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Soejima et al., U.S. Patent Application Publication 2003/0074528 (Soejima). Claims 10-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Soejima in view of purported Applicant Admitted Prior Art. The applicants respectfully traverse these rejections.

Soejima neither teaches nor suggests a method comprising:

determining a first specification for a first set of needed storage regions, wherein the first set of needed storage regions is needed to perform an operation on a logical volume, and the first set of needed storage regions satisfies an intent of the logical volume;

searching a plurality of existing storage regions for a corresponding existing storage region for each needed storage region in the first set of needed storage regions; and

if no existing storage region is found corresponding to a first needed storage region in the first set of needed storage regions, determining a second specification for a second set of storage regions to be acquired,

as required by independent claim 1 and generally required by independent claims 13, 18, and 23.

Regarding the claimed “determining a first specification . . .”, the Examiner refers (Final Office Action of October 2, 2006 (“FOA”) p. 3, ¶1) to paragraphs 0017-0019 of Soejima which state:

In accordance with an aspect of the present invention, there is provided a volume management method for setting at least a logical volume over a plurality of physical storage devices, said volume management method comprising the steps of:

receiving a volume creation request specifying information on a requested storage capacity and information on requested average performance;

forming a judgment as to whether or not there exists an unoccupied area satisfying the requested storage capacity throughout the storage devices.

In particular, the Examiner appears to equate Soejima’s volume creation request with the claimed “first specification for a first set of needed storage regions.” The applicants respectfully disagree. While Soejima’s volume creation request may include information about storage capacity and average performance, there is nothing in the cited portion of Soejima teaching or suggesting that the request include *a specification of a set of needed storage regions*. Similarly, because Soejima is silent as to the first set of needed storage regions, there is no teaching or suggestion that the storage regions are needed to perform an operation on a logical volume. The Examiner references paragraph 0017 (e.g., “setting at least a logical volume over a plurality of physical storage devices”), but this fails to teach *storage regions needed for the performance of an*

*operation on an existing volume*, and particularly that Soejima's request, i.e., that which the Examiner equates with the claimed first specification, includes such a set of needed storage regions.

As to the claimed intent for which the first set of needed storage regions are needed, the Examiner alludes to paragraph 0019. However, this paragraph simply recites "forming a judgment as to whether or not there exists an unoccupied area satisfying the requested storage capacity throughout the storage devices." Thus, there is no teaching or suggestion of an *intent of the logical volume*. Finally, the referenced portion of Soejima fails to teach or suggest anything corresponding to the operation of determining.

In response to similar arguments, the Examiner states:

... Applicant acknowledges that Soejima's volume creation request may include information about storage capacity and average performance . . . . In addition, Soejima et al., clearly discloses such teaching on page 2, paragraph [0018]. (FOA, p. 7, ¶7)

The Examiner's response simply reiterates the rejection and fails to address the applicants' arguments including, for example, that information about storage capacity and average performance is not "a specification of a set of needed storage regions."

Regarding the claim requirement that "the first set of needed storage regions is needed to perform an operation on a logical volume," the Examiner responds:

... the physical devices are the physical volume being used to create the logical volume as later clarified on paragraph 0018. (FOA, p. 8, ¶1)

Again, the Examiner ignores the claim limitation in full context, i.e., a first specification is determined, the first specification is for a first set of needed storage regions, and, *inter alia*, the first set is needed to *perform an operation on a logical volume*. The mere fact physical devices are used to create a logical volume (as purportedly taught by Soejima), does not teach or suggest the detailed requirements of the first specification.

Regarding the claim requirement that "the first set of needed storage regions satisfies an intent of the logical volume," the Examiner responds:

... the intent is to use the unoccupied area of physical storage devices . . . . (FOA, p. 8, ¶2)

Here, the Examiner has not identified an intent of the logical volume in Soejima, but rather identified some highly general purpose that is *not* articulated in Soejima. Whether or not the Examiner's characterization of Soejima is correct, this is not what the applicant's specification defines "intent" to be. See, for example, paragraphs 0023-0029.

Regarding the claimed searching operation, the Examiner refers to paragraphs 0022 and 0024 of Soejima (FOA, p. 3, ¶2), which state:

In accordance with another aspect of the present invention, there is provided a volume management method for searching a storage apparatus comprising a plurality of physical storage devices, on which at least one logical volume is set, for an unoccupied area used by a new volume over some of said physical storage devices, said volume management method comprising the steps of:

... forming a judgment as to whether or not all volumes, which include existing volumes and the new volume supposed to be added to the existing volumes, each satisfy its requested average performance by referring to information of requested average performance on a storage means for each of the existing volumes which share any of the storage device with an unoccupied area; and

While Soejima teaches searching a storage apparatus for an unoccupied area used by a new volume, the reference fails to teach or suggest searching existing storage regions for *a corresponding existing storage region for each needed storage region in the first set*. As noted in paragraph 0024 of Soejima, the search is used to form a judgment as to whether or not *all* volumes satisfy a requested average performance. Again, the Examiner appears to equate the claimed "first set of needed storage regions" with the information in Soejima's "request," i.e., information about storage capacity and average performance. Neither paragraph 0022 nor 0024 teach or suggest searching for existing storage regions corresponding to Soejima's information about storage capacity or average performance. The Examiner's response to arguments in this regard (FOA, p. 8, ¶3) provides no further clarification of the Examiner's position.

Regarding the claimed determining a second specification, the Examiner refers generally to alternate plan execution as described in Figures 4 and 6. However, the

referenced alternate plans simply do not teach or suggest determining a second specification for *a second set of storage regions to be acquired* if no existing storage region is found corresponding to the first needed storage region.

Finally, the applicants note MPEP §2131 makes clear the requirements for anticipation:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). . . . "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). (Emphasis added)

Thus, in addition to showing every element, the reference must teach their arrangement as required by the claim. As described above, Soejima does not teach or suggest all of the claim limitations, and those elements of Soejima identified by the Examiner as corresponding to applicants' claim limitations are not arranged in a manner corresponding to the applicants' claims.

Accordingly, the applicants respectfully submit that independent claims 1, 13, 18, and 23 are allowable over Soejima. Claims 2-12, 14-17, 19-22, and 24-27 depend from independent claims 1, 13, 18, and 23, and are allowable for at least this reason.

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12/1/06  
 Date of Signature

Respectfully submitted,



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